active syphilitic process, might convey the infection to others, and quoted cases in support of the opinion that visceral lesions of the tertiary stage might be infectious under conditions which rendered contagion possible.

SUBDIVISIONS OF THE SUBJECT.

Owing to the facts that, though syphilitic lesion of the nervous centres fell into several well-marked categories, the symptoms were not always, or even generally, so distinctive as to allow non-fatal cases to be arranged in corresponding groups, and that even *post-mortem* examination might leave some uncertainty, he proposed to deal for the most part with fatal cases under the head of (*a*) disease of vessels, (*b*) gummata, and (*c*) inflammatory infiltration of tissues, but also to refer to non-fatal cases.

SYPHILITIC ARTERIAL DISEASE.

Syphilitic arterial disease, the lecturer continued, had been for many years a well-recognised affection. None of the arteries were exempt from liability, although, according to present knowledge, some suffered in larger proportion than others. Both the aorta and the pulmonary artery might suffer, as also any of the systemic branches sufficiently large to have received distinctive names; and there was abundant reason for believing that the smaller and even microscopic arteries were at least as vulnerable as their larger relatives. The syphilitic process might involve the entire thickness of the vascular walls; but it commenced in the inner or outer coat, and always mainly implicated one or other or both of these. Its infrequent commencement in the inner coat was due probably to direct inoculation by virus circulating in the blood, and he was inclined to agree with Mr. Hutchinson that when the outer coat suffered primarily, it was from the fact that the vessel had become involved in lesions originating in the vicinity. Syphilitic disease caused thickening and irregularity of vessels, with tendency, on the one hand, to aneurysmal dilatation and rupture, and, on the other, to stenosis, and more or less complete obstruction by thrombosis. The consequences which would naturally follow such conditions were derangement of circulation and impairment of nutrition in the parts supplied by the diseased vessels, with, on the one hand, softening or some equivalent change, and, on the other, hæmorrhage, either from the rupture of a diseased vessel or in connection with diffused degeneration of tissue. It was a curious fact that, although these syphilitic lesions were occasionally widely distributed, they usually occurred in limited districts, the vessels elsewhere remaining wholly, or for the most part, healthy.

The lecturer then related at length three cases in which there were either central nervous lesions or symptoms referrable to the nervous centres, but in which these were of secondary, if not trivial, importance, the main interest of the cases being the fact that they furnished admirable illustrations of the character and consequences of advanced syphilitic arterial disease of large vessels.

A case was also related in which all the main arteries at the base of the brain appeared to be completely obstructed by old coagula. Six months before his death the patient, a man, aged 35, had a fit followed by paralysis and failure of sight, from which he in a great measure recovered. About four weeks before death he began to lose the use of his right arm, and subsequently his speech became affected, and the mouth was drawn to the right. After a temporary improvement he had a fit, became comatose, and died in two days. The difficulty was to explain how the cerebral circulation and the normal consistence of the brain was maintained, in spite of extensive old coagula obstructing the basilar artery and the internal carotid arteries and their branches. The clot in the basilar was not universally adherent, and it must be supposed that there was space for a little blood to pass. In another case related the left internal carotid and its branches were atheromatous for about an inch, and filled with adherent cylinders of tough old coagulum. In a third case the right middle cerebral was obstructed by a firm decolorised clot. In these two cases there were also intracerebral lesions. The remainder of the lecture was devoted to the consideration of cases in which the disease was limited to the basilar artery and its branches, and the pons or neighbouring parts had undergone softening.

THE TREATMENT OF DIABETES MELLITUS BY MEANS OF PANCREATIC JUICE.

BY HECTOR W. G. MACKENZIE, M.D., F.R.C.P.,
Assistant Physician to the Royal Free Hospital and the Hospital for Consumption, Brompton.

IN the BRITISH MEDICAL JOURNAL for January 7th Dr. Mansell-Jones suggests that as the juice of the thyroid gland appears to be almost a specific in myxœdema, pancreatic juice administered before or after meals should be given a fair trial in diabetes, as this disease, he adds, in most cases, appears to be due to disease or disordered function of the pancreas.

Neither pathology nor physiology, however, lend much encouragement to the hope that diabetes mellitus will prove tractable in such a simple way. In the first place, the pathogenesis of this disease is much more complex than that of myxœdema, and disease of the pancreas accounts for probably only a fraction of the cases of this malady. In the second place, even if it were a fact that in most cases diabetes was due to disease or disorder of the pancreas, the analogy of this doubly active gland, both excreting and secreting, with the ductless thyroid gland is not a very close one. There is some reason, however, on theoretical grounds, for the belief that pancreatic juice might have some beneficial effect even in non-pancreatic diabetes.

The recent researches into the pathology of the pancreatic form of diabetes mellitus, of which a most interesting account was given by Dr. Vaughan Harley in the BRITISH MEDICAL JOURNAL for August 27th, 1892, make it very probable that, in addition to the well-known tryptic, diastatic, fat-splitting, and milk-curdling ferments, a glycolytic ferment is also produced by the pancreas. Assuming the existence in the normal pancreas of this latter ferment, I thought it possible that the administration of a pancreatic extract by the mouth might have some beneficial action in diabetes mellitus by assisting to destroy the sugar in the blood. Acting on this idea, therefore, I anticipated Dr. Mansell-Jones's suggestion, and for some time past have been treating in a tentative way two pronounced cases of diabetes mellitus under my care at the Royal Free Hospital, by the administration of liquor pancreaticus in half-ounce doses given three times a day immediately after food. It is the generally received opinion that, when given in this way, the liquor has no appreciable digestive power, so that we may put the latter effect on one side. No other medicine was given after this treatment was started, and in every respect the patients remained under the same conditions as before.

In both cases the patients have assured me they have experienced benefit from the treatment. I should not have attached so much importance to their statements had it not been that, without any suggestion on my part or collusion on the part of the patients, who attended on different days, there was a remarkable agreement in the accounts they gave of this beneficial effect. They both said they had lost to a great extent their feeling of lassitude and languor, and felt stronger in every way. Their thirst, moreover, had considerably lessened, and they had passed a smaller quantity of urine. These beneficial effects, moreover, have continued. The specific gravity of the urine and the relative amount of sugar have, on the other hand, not been affected.

In an in-patient under the care of my colleague, Dr. Samuel West, his house-physician, Dr. Rendel, informs me that since the administration of liquor pancreaticus, the amount of fluid imbibed during the twenty-four hours, which had previously averaged 12 pints, has fallen to 6 pints, with a similar decrease in the amount of urine passed.

In a disease like diabetes we must be thankful for even small mercies. For myself I would rather find an improvement in the general condition of the patient, increased strength, diminished thirst, and diminished quantity of urine as a result of treatment than a mere diminution of the amount of sugar in the urine without such improvement. I should have preferred, of course, to have found both results. It is evident that liquor pancreaticus is no specific, but the effects

in these cases are encouraging enough to induce me to make further trial of it, and it is possible that in cases of true pancreatic diabetes the benefit might be greater.

THE TREATMENT OF DIABETES BY PANCREATIC EXTRACTS.

By NEVILLE WOOD, M.R.C.P.Lond.,
Clinical Assistant Victoria Hospital for Children.

This plan, proposed in the British Medical Journal of January 7th, occurred to me early last year as worthy of a trial from certain theoretical considerations. I append a brief summary of two cases, in which the method was employed at my suggestion.

Case I.—This case at the Chelsea Infirmary was kindly placed under the treatment by Mr. Moore. It was of the so-called pancreatic type. A boy, aged 13, whose father had recently died of diabetes, had suffered from symptoms of diabetes before beginning this treatment for six months. From January 1st, 1892, he was placed on diabetic diet, and was given first codeine, from which he received no benefit, and then morphine, under which he improved. The zymin treatment, with diet as before, was begun May 18th. His general condition was bad, appetite not ravenous, thirst great, weight 5 st. 10¾ lbs, quantity of urine in twenty-four hours about 90 oz., sp. gr. 1036, sugar estimated at 6.5 grains per ounce. Zymin was given in increasing doses, with the subsequent addition of sodium bicarbonate, and finally pancreatin pills, coated with keratin, were substituted. A daily record of the amount and specific gravity of the urine was kept, and quantitative estimations of sugar were made with Fehling's solution. The treatment was continued till August 21st, when he left the infirmary. Unfortunately, owing to deception on the part of the patient, and dietetic indiscretions, which caused diarrhœa on more than one occasion, many of the observations are valueless, and, with the amount of comment necessary, would be out of place in this summary. What is certain is that his general condition vastly improved, his weight increased 7¼ oz., and thirst diminished. During the first ten days of treatment the amount of urine in twenty-four hours averaged 78 oz., and for the last ten days before leaving it averaged 35 oz., while the specific gravity for the same periods averaged 1036 and 1027 respectively. The first reliable quantitative estimation of sugar made May 20th, gave 6.5 grains to the ounce, the last, made at the end of June, 4.5. The boy was readmitted November 5th, and is still in the infirmary. He is improving under opium, but has not reached the standard of last summer under the pancreatic treatment.

No definite deduction can be made from this case owing to the facts already mentioned, that he was improving at the time zymin was commenced, and the intractability of the patient, while the summer weather and the continuance of restricted diet were in his favour. Its value is also less because press of work prevented me from making a sufficient number of quantitative estimations towards the close of the case. Nevertheless, the improvement in general condition, and in some of the cardinal symptoms of the disease, while he was taking pancreatic preparations, compared with the periods under opium and the alkaloids, is perhaps worthy of record.

Case II.—The observation of this case at St. George's Hospital was kindly permitted me by Dr. Cavafy. A woman, aged 24, who gave no family history of diabetes, had suffered from symptoms for about four months before beginning pancreatic treatment. Previously to this diabetic diet and codeine were given. Pancreatic treatment was commenced June 10th, 1892, and continued till she left the hospital on July 19th. The diet was not changed, and zymin, etc., was used as in the previous case. At the outset the general condition was that of debility, the amount of urine varied between 2,500 and 4,000 c.c., specific gravity about 1034, and the percentage of sugar 7. The general condition of the woman improved, and she gained 3 lbs. in weight, but she complained of increased thirst. The amount of urine remained about stationary, and while the specific gravity ranged rather lower, the percentage of sugar increased to 10. She went to the Convalescent Hospital at Wimbledon, and left there for her home September 21st, still further improved in her general condition. On September 26th she was readmitted at St. George's, rapidly fell into coma, and died on the 27th. The necropsy showed no notable lesion, and the pancreas is described as "not abnormal, soft like the rest of the body."

In this case, of the cardinal symptoms, diuresis was unchecked, while thirst and the excretion of sugar increased. The increase of weight is possibly attributable to the better assimilation of her food, perhaps of the freely supplied hydrocarbon element. The fall in specific gravity may perhaps be explained on a somewhat similar hypothesis.

From the observation of these two cases I have little hope that diabetes can be influenced by pancreatic preparations in the same way that myxœdema is by thyroid juice. A subsequent perusal of the interesting monograph on Pancreatic Diabetes by Dr. Thiroloix has inclined me to agree with that author that, while in some cases pancreatic lesion is a probable factor, it is not the chief one, and we must look for the essential pathology in some part of the nervous system, perhaps in the great sympathetic ganglia of the abdomen.

A CASE OF MYXŒDEMA TREATED WITH THYROID EXTRACT AND THYROID FEEDING.

By R. A. LUNDIE, M.A., M.B., C.M.Edin.

The patient, aged 54, represented in the accompanying photographs first came under my observation in July, 1891, when I found her suffering from all the chief symptoms of myxœdema—waxy, swollen features, thick, coarse skin, torpidity, low temperature, slow speech, etc., in a very marked degree. The

Fig. 1.—Case of Myxœdema when treatment was commenced.

disease appeared to have commenced about fourteen years before.

Treatment by subcutaneous injection of extract of sheep's thyroid was begun in October, 1891, in doses somewhat larger than those recommended by Dr. Murray.[1] For about six weeks no change was observed; but after that period improvement was rapid and satisfactory. But the injections had to be discontinued, first in consequence of diffused pains evidently connected with the treatment, and later on account of a series of abscesses resulting from the injections, probably, however, originating from an accidental abscess quite independent of them.

About five weeks without injections sufficed to show that the patient would speedily relapse. I determined, therefore—I must say with small hope of success—to administer the extract by the mouth, and have continued to do so since July, 1892. The patient is now (December, 1892) taking extract representing one-sixth sheep's thyroid twice weekly. The result has been most satisfactory; within a fortnight

[1] British Medical Journal, vol. ii, 1891, p. 796.